Destruction of Flowers by Birds

As a sequel to the discussion in the columns of NATURE (vol. ix. pp. 482 and 509) on the destruction of flowers produced by small birds nipping off the bottom of the perianth, I may record that their education in this habit is progressing here.

My own crocuses, in a town garden, have suffered for years, each one being nipped off as soon as it expanded, but the country gardens have hitherto escaped; this year, however, I noticed that a garden five miles from the town and close to a large farmyard was attacked, and no single flower left uninjured.

Burton-on-Trent, March 30 P. B. M.

OUR ASTRONOMICAL COLUMN

SOUTHERN DOUBLE STARS.—(1) γ Coronæ Australis.—This fine binary must have very much changed its angle of position since the last published measures, if, as is most probable, the late Capt. Jacob's elements afford an approximation to the true orbit. They are as follows:—Periastron passage, 1863·08; period, 100·8 years; node, 352° 13′; distance of periastron from node, 266° 25′ (or its angle of position, 256° 12′); inclination, 53° 35′; excentricity, 0·602, and semi-axis, 2″·549. Calculating from these elements, we find the subjoined angles and distances about the present epoch:—

	°	″
1874·5	155·7	1·98
75·5	153·0	2·04
76·5	150·4	2·09

The last measures recorded by Capt. Jacob gave for 1858·20, angle, 343°·0; distance, 1″·53. Though γ Coronæ Australis is accessible at the observatories of Southern Europe, our information respecting it comes so far, we believe, from India or the other hemisphere.

Amongst the southern binaries, certain or suspected, to which we would also draw attention with the hope of seeing measures put upon record during the present year are *h* 4087, which, as measured by Jacob, showed considerable change since Sir John Herschel's Cape observations; γ Centauri, a difficult object in 1853, but comparatively easy at the end of 1857, though the angles so far are very puzzling; *h* 5014, with the view to decide as to its binary character or otherwise; and *h* 5114, which is in all probability a revolving double-star of short period; it is B. A. C. 6632: if this star is regularly measured, an orbit may soon be feasible. To save trouble of reference, we append the places of these stars for the commencement of 1875:—

	R.A.			N.P.D.	
	h.	m.	s.	°	′
h 4087	8	17	43	130	35·5
γ Centauri ...	12	34	38	138	16·4
h 5014	17	58	38	133	24·2
γ Coronæ Aust. ...	18	57	48	127	14·3
h 5114	19	17	46	144	34·4

VARIABLE STARS.—In *Astron. Nach.* No. 2031, Herr Julius Schmidt, of the Observatory at Athens, publishes results of his observations of this class of objects in 1874. He has many maxima and minima of the three short-period variables in Sagittarius discovered by him in 1866; the positions for 1875·0 and latest assigned periods are as follows:—

	R.A.			N.P.D.		PERIOD.
	h.	m.	s.	°	′	
X Sagittarii (3 Fl.)	17	39	41	117	46·8	7ᵈ·01185
W „	17	57	2	119	35·1	7 ·59327
U „	18	24	32	109	12·7	6 ·74518

There appears to be some confusion in Schmidt's reference to W and X as regards the star which is identical with 3 Sagittarii of Flamsteed. In *Astron. Nach.* No. 1832, where he gives positions for 1870, he calls Flamsteed's star X, and Schönfeld has followed him in his catalogue of 1875, but in the last number of the same periodical Flamsteed's star is called W. With periods so nearly alike, this difference of nomenclature may prove troublesome. The second of the above stars has also been termed by Schmidt γ′ Sagittarii. The period of 68 *u* Herculis, according to this zealous observer, is about forty days; it has been seen as high as the fourth magnitude and as low as the sixth, but the variation appears to be generally within narrower limits: the times of minima are more easily determined than those of maxima. Schmidt fixes the last maximum of the remarkable star χ (Bayer) Cygni to 1874, Nov. 8, and thinks this a pretty certain determination. Argelander's last formula in vol. vii. of the Bonn observations, assigns 1874, Sept. 6, or sixty-three days earlier, but the error of this formula in 1870 amounted to ninety-three days, and had progressively reached this figure since the year 1854, when the calculated and observed time of maximum nearly agreed. Schönfeld gives a formula which still shows errors exceeding forty days and in opposite directions in 1842 and 1871. The interval between the last two observed maxima is 399 days, and another may be expected to occur about the middle of December next; the minimum may be looked for early in June. α Herculis, according to Schmidt, has been more than usually changeable during the past year. β Pegasi continues irregularly variable through not more than a half magnitude in about forty-one days, occasionally remaining a considerable time without perceptible change.

MINOR PLANETS.—Ephemerides of these bodies for 1875, so far as elements were available, were circulated some time since by Prof. Tietjen, of Berlin, in anticipation of the publication of the *Berliner Astronomisches Jahrbuch*, with the preparation of which he is now charged. The brightest of those coming into opposition during the month of April are Thalia on the 1st, of 10th magnitude; Flora on the 7th, of 9½ mag.; Hecuba on the 16th, of 10½ mag.; Lætitia on the 17th, of 9th mag.; Europa on the 18th, of 10½ mag.; and Urania on the 25th, of the same. The only minor planets since No. 7 which rise higher than the 9th magnitude during the remainder of the present year are Metis, Fortuna, and Eurydice in September, Clotho in November, and Massalia in December.

DANIEL HANBURY, F.R.S.

THE memorable list of those who during the past winter have departed from the scientific world, received last week another name for whose loss there is no palliation to be drawn from the consideration of advanced age or of completed work. Daniel Hanbury died on March the 24th, of typhoid fever, aged 49. Hardly any figure was more familiar than his to those who frequented the meetings of the Royal or Linnean Societies at Burlington House. The same simplicity and quiet enthusiasm which will make his death a matter of sincere regret to those who were accustomed to meet him there, influenced and animated his scientific work. A member of a business house which has almost a historic character, he began, a quarter of a century ago, investigating and writing upon subjects suggested by his occupations. Anyone who has had occasion to follow him in such matters will need no defence of the utility of his work; nor can indeed anyone dispute the value of critical and accurate knowledge about the materials of pharmacy. There was no side, whether literary or scientific, from which he left the subjects of his studies unapproached. A few years since he retired from business in order to obtain greater leisure, and he successfully brought what proved to be the work of his life to a close by the publication, at the end of last year, in conjunction with Prof. Flückiger, of the "Pharmacographia." This was reviewed in these pages at the time of its appearance.* It is only

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* NATURE, vol. xi. p. 60.

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necessary to say now that it is a patient and elaborate investigation from original sources of the usually obscure history and origin of vegetable drugs. Those who best know how to appreciate the book find their admiration everywhere divided between its laboriousness and its perfect conscientiousness.

A life so spent leaves little else to record. He accompanied Dr. Hooker in a tour in Syria ; in 1867 he was elected a Fellow of the Royal Society, and was a member of the Council at the time of his death. Of the Linnean Society he was vice-president and treasurer, and his place in it will not be easy to fill. The Society has passed through a somewhat serious crisis for a learned body. The change from the rather old-fashioned retirement of its rooms in Soho Square, and afterwards in the main building of Burlington House, to its present stately quarters, has produced a certain strain upon a constitution always essentially conservative. That difference of temperament between the members of successive generations which is a constant physiological phenomenon, found in Daniel Hanbury an exception. Perfectly cautious, he was perfectly free from prepossession, and no proposition—however revolutionary—seemed to him unreasonable if he could convince himself that it would add to the welfare of the body which he wished to see take the lead as the chief Biological Society of the country.

TWENTY-THREE HOURS IN THE AIR

THE longest aërial trip on record was made by the "Zenith," a balloon which ascended from Paris on Thursday, 23rd March, at half-past six in the afternoon, and landed at Montplaisir, near Arcachon, 700 miles from Paris, on the following evening at half-past five. The aëronaut was M. Sivel, and the passengers MM. Gaston Tissandier, the editor of *La Nature*, M. Albert Tissandier, his brother, an artist, and two other gentlemen.

The balloon drifted southwards from La Villette gasworks for a few miles, when, crossing Paris, it deviated in a westerly direction before reaching the fortifications. It then travelled south-west during the whole of the night, crossing Meudon, Chevreuse, Tours, Saintes, &c., up to the mouth of the Gironde, which was crossed at ten o'clock in the morning, 600 miles having been run in 15½ hours. The wind, which was not strong, having gradually diminished, the crossing of the Gironde occupied not less than thirty-five minutes. As the sun became bright and the weather hot, a brisk wind blew from the sea towards the land, but only up to an altitude of 900 feet. The aëronauts took advantage of this current to escape the upper current drifting towards the sea, and followed the margin of the Gulf of Gascony by alternate deviations obtained by changes of level.

Landing was accomplished without any difficulty by throwing a grapnel, and all the instruments were taken back to Paris. Most interesting observations have been taken, and will be described to the Academy of Sciences at an early sitting. But we are enabled to give a summary of these through the courtesy of our friend M. Tissandier.

A quantity of air was sent by an aspirator through a tube filled with pumice saturated with sulphuric acid in order to stop the carbonic acid and ascertain how many hundreds of grains are contained in each cubic foot. A series of experiments were made at different levels from 2,700 to 5,000 feet, the utmost height reached. The analysis will be made by a new method invented by MM. Tissandier and Hervé Mangon, a member of the French Institute.

The electricity of the air, tested with copper wires 600 feet long, was found *nil*, except at sunrise. It is known that at that very moment an ascending cold current is almost always felt.

The minimum of temperature was about + 25° Fahr. ; at Paris, on the same night, it was about + 28° at the Observatory.

The moon was shining brilliantly, with a few cirrus clouds that manifested their presence by a magnificent lunar halo, which was observed from five o'clock to six in the morning.

The phenomenon gradually developed : the small halo (23°) showed itself first, and afterwards the large halo (46°), but as the aëronauts were at a small distance below the level where icy particles were suspended, the larger halo, instead of being circular, was seen projected elliptically. The dimensions of the smaller halo had been somewhat diminished. The horizontal and the vertical parhelic (or rather paraselenic) circles crossing each other at right angles on the moon, a cross was seen in the middle of a circle, and an ellipse concentric to it. The several phases of the appearance were sketched and will be sent to NATURE. The last part of the phenomenon was a cross, that remained longer than the two halos, which had vanished before the rising of the sun.

W. DE FONVIELLE

ON A PROPELLER IMITATING THE ACTION OF THE FIN OF THE PIPE-FISH[*]

THE peculiar mechanism of the dorsal fin of the Pipe-fish (*Syngnathus*) and Sea-horse (*Hippocampus*), Fig. 1, which is also known to be present in the Electric Eel (*Gymnotus*), has been referred to by more than one naturalist. In his "Handbook to the Fish-house in the Gardens of the Zoological Society," Mr. E. W. H. Holdsworth, speaking of the Pipe-fish, remarks that "they generally maintain a nearly erect attitude, supporting themselves in the water by a peculiar *undulating* movement of the dorsal fin ;" and the late Dr. Gray, in the Proceedings of the Zoological Society,[†] also says that "they swim with facility, but not very rapidly, and they seem to move chiefly by the action of the dorsal and pectoral fins. The former is fully expanded when they move, and in very rapid motion, the action being a kind of wave commencing at the front end and continued through its whole length, continually repeated, so as to form a kind of screw propeller."

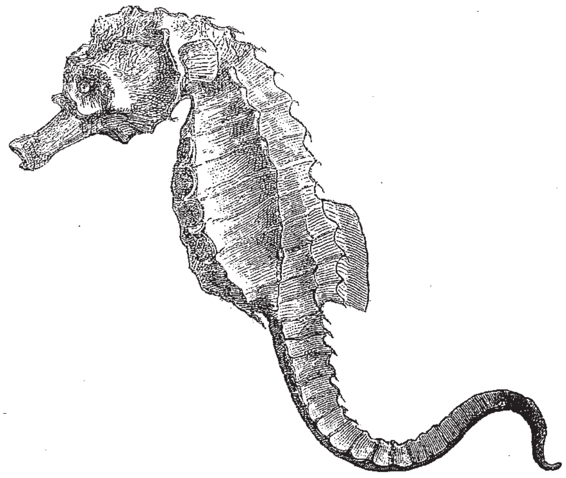

FIG. 1.—Side view of Branched Sea-horse (*Hippocampus ramulosus*), in which the dorsal undulating fin is clearly shown.

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[*] The substance of a lecture delivered by Prof. A. H. Garrod at the Royal Institution, March 16.

[†] P.Z.S. 1861, p. 238.

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